Technology that saves lives.

Fire damper actuators

BELIMO

More performance, more value – more safety.

Fires represent the greatest potential threat to people and tangible assets in buildings. Efficient fire protection saves lives in case of emergency, helps minimise property damage and secures the continued operation of companies. The best protection against the spread of fire and smoke through the air ducts is provided by the motorised fire dampers to form fire compartments.

In case of fire, Belimo safety actuators for fire dampers automatically move into their safety positions and keep the dampers closed during the fire.

Safety is top priority

- Responsible fire protection requires practical solutions with suitable products.
- As a rule, the owner and/or the operator are responsible for proper functioning of the fire protection systems during the entire building life cycle.
- Prescribed inspections must be carried out and logged periodically.

Belimo offers more

As a reliable supplier of tested fire damper actuators, we provide you with safety through:

- long years of experience
- market-appropriate, proven solutions
- tested Swiss quality
- local, experienced contacts
- fire protection solutions which are oriented to the building life cycle
- a complete product range
- the maximum in delivery reliability.

Motorised fire dampers

In case of fire, they are moved into the safety position (closed) by means of the spring energy of the fire damper actuator when:

- the operating temperature is exceeded in the duct or in the environment
- triggered by a smoke detector
- the supply voltage fails
- the air conditioning plant is shutdown
- the fire alarm system triggers.

In case of fire, the Safety Position Lock™ function keeps the motorised fire dampers in the safety position.

Reliability and profitability

Customers benefit from the following advantages:

- Maximum safety through reliable closing and holding of the damper in the safety position
- The possibility of scenario control by means of intelligent controls and the integration of sensors
- The protection of the infrastructure in the event of a power failure through automatic closing of the fire damper by means of the spring energy of the actuator
- Central monitoring and automated function tests
- Reduced maintenance and operating costs

Standards and state-of-the-art

- The "state-of-the-art technology"[1)] must be considered in addition to the technical regulations (e.g. standards).
- In Europe, fire dampers are manufactured according to the product standard EN 15650, checked with fire resistance testing pursuant to EN 1366-2 and classified according to EN 13501-3.

1) FURTHER LITERATURE ON THE SUBJECT:

- Expert opinion "Motorized fire dampers and the generally accepted (state-of-the-art) technical standards" from the attorneys-at-law Heiermann Franke Knipp, Essen, Germany, 2002
- Technical Paper "The role of motorised damper control in legislation" by Peter E. Jackman, International Fire Consultants Ltd., Great Britain, 2004

Full product range, proven motorisation solutions.

Belimo supplies cost-effective and easy-to-integrate solutions for the motorisation of fire dampers.

BFL

- Optimised actuator with slim design for small and medium fire dampers
- Simple and fast installation
- In case of fire, the patented Safety Position Lock™ solution reliably keeps the fire damper closed

Torque	(M) spring	4 Nm 3 Nm
Power consumption:		
AC/DC 24 V		In operation 2.5 W / at rest 0.8 W
AC 230 V		In operation 3.5 W / at rest 1.1 W
Angle of rotation		95°
Running time	(M) spring	< 60 s 20 s
Spindle driver		Form fit 12 x 12 mm
Thermoelectric tripping device (T)		

BFN

- Powerful actuator for medium and large fire dampers in flat design
- Simple and fast installation
- In case of fire, the patented Safety Position Lock™ solution reliably keeps the fire damper closed

Torque	(M) spring	9 Nm 7 Nm
Power consumption:		
AC/DC 24 V		In operation 4 W / at rest 1.4 W
AC 230 V		In operation 5 W / at rest 2.1 W
Angle of rotation		95°
Running time	(M) spring	< 60 s 20 s
Spindle driver		Form fit 12 x 12 mm
Thermoelectric tripping device (T)		

Note
Fire damper actuators are only supplied to fire damper manufacturers.

BF

– Well established actuator for large fire dampers with high torque requirements

Torque	(M)	18 Nm
		12 Nm
Power consumption:		
AC/DC 24 V		In operation 7 W / at rest 2 W
AC 230 V		In operation 8.5 W / at rest 3 W
Angle of rotation		95°
Running time	(M)	< 120 s
		16 s
Spindle driver		Form fit 12 x 12 mm
Thermoelectric tripping device (TN)		

BFG

– Well established actuator for medium and large fire dampers with 180° (with linkage)

Torque	(M)	11 Nm
		8.5 Nm
Power consumption:		
AC/DC 24 V		In operation 7.5 W / at rest 2 W
AC 230 V		In operation 9.5 W / at rest 3.5 W
Angle of rotation		180°
Running time	(M)	< 120 s
		20 s
Spindle driver		Form fit 10 x 10 mm
Thermoelectric tripping device (TN)		

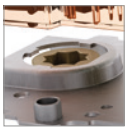
Compact and powerful due to innovative technology.

Noticeable position indication

Casing made from premium engineering polymer
– Fulfils the requirements of EN 15650
– Suitable for fire safety applications
– Halogen-free flame retardant
– High glow wire resistance

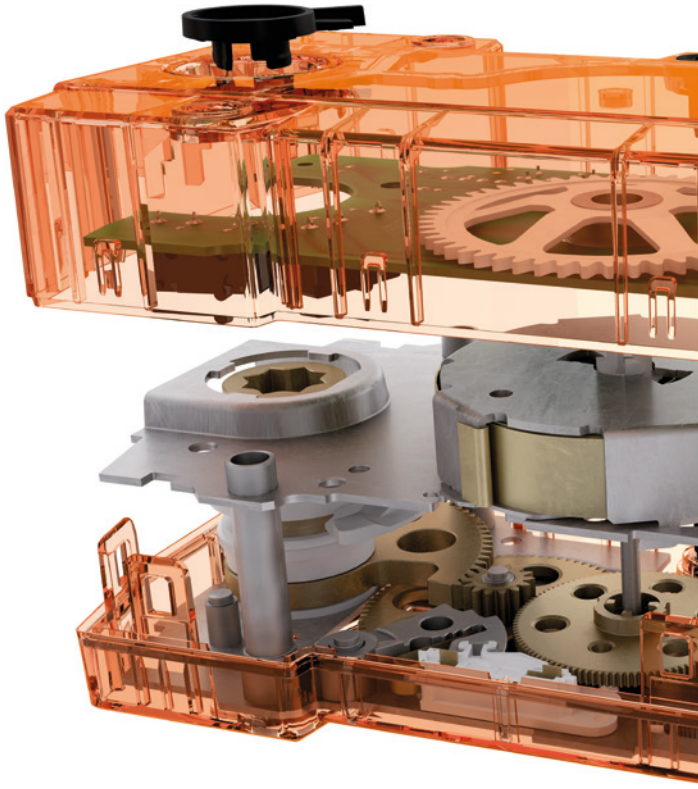
Integrated auxiliary switches
– Potential-free
– Fixed switching points

Form fit made of steel
– Safe connection to damper spindle



Steel hollow pillars
– Simple and fast installation

Safety Position Lock™
– Reliably holds the fire damper in the safety position in case of fire
– Patented technical solution
– Integrated as standard
– Not resettable



Safety Position Lock™

Normal operation

Fire condition

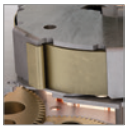
Actuator: BFN

Position lock
– Position lock of manual override control
– Position lock releases when supply voltage is applied

Connecting cable
– Halogen-free
– Optional with plug
– With colour coding

Thermoelectric tripping device
– Protected function of supply line
– LED status indicator
– Checking the damper function on site using the test button
– Tested according to ISO 10294-4

Manual override control
– Integrated overload protection
– Freewheel function prevents blocking by hand crank



Spring assembly made of steel
– Secure closing in case of fire

Steel gear-box
– Robust
– Fire-resistant

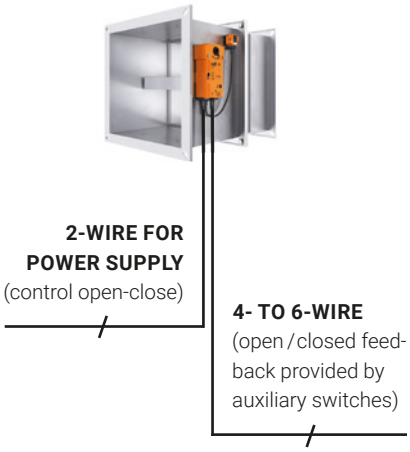
General Information

– 100 % testing of the functions of all actuators prior to delivery
– 60,000 safety positions guaranteed under nominal load
– Controlled closing of the fire damper reduces loading of the ventilation duct
– Reduction of power consumption in the rest position (open)
– Maintenance-free

Conventional and digital control & monitoring.

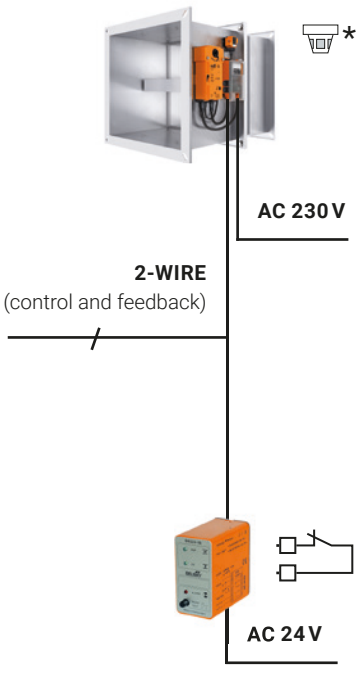
Conventional control with position feedback

Actuator types	– BFL/BFN/BF – BFG: 24/24-T(N)/230/230-T(N) T(N) = Thermoelectric tripping device
Connection to control cabinet	– Cables for motors and auxiliary switches wired directly to control cabinet – Feedback of damper position by means of auxiliary switches
Note	For 24 V actuators, the voltage drop over long lines should be noted. The voltage at the actuator must be within the tolerance stated in the data sheet.



Control and monitoring via SBS-Control

Actuator types	– BFL/BFN/BF – BFG: 24-T(N)-ST/24-ST T(N) = Thermoelectric tripping device ST = With plug
Connection to automation station	**Communication and power supply unit BKN230-24** – Decentralised power supply unit for 24 V fire damper actuators – Local power supply AC 230 V – Integrated LED status indicator – Connection for a smoke detector contact and/or a thermoelectric tripping device  **Communication and control unit BKS24-1B and plug socket ZSO-11** – For controlling and monitoring of a fire damper – 3 LEDs for indicating operating statuses and faults – Function test of fire damper actuator – Potential-free auxiliary contacts for integration into system 



Control and monitoring via SBS-Control

Actuator types

- BFL / BFN / BF
- BFG: 24-T(N)-ST / 24-ST

T(N) = Thermoelectric tripping device
ST = With plug

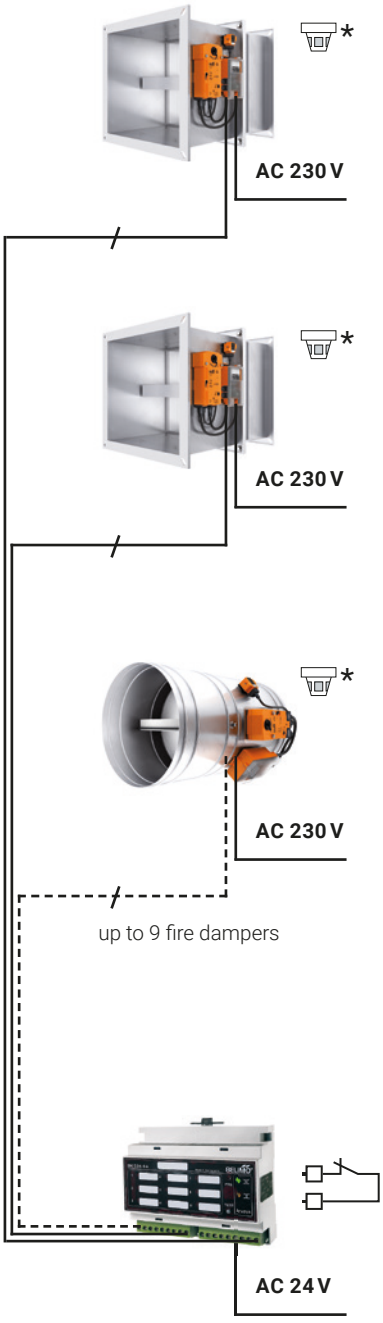
Connection to automation station

Communication and power supply unit BKN230-24

- Decentralised power supply unit for 24 V fire damper actuators
- Local power supply AC 230 V
- Integrated LED status indicator
- Connection for a smoke detector contact and / or a thermoelectric tripping device

Communication and control unit BKS24-9A

- Controls and monitors for up to 9 fire dampers
- LED status display indicating operating statuses and fault messages
- Function test of fire damper actuators
- Potential-free auxiliary contacts for integration into system
- Zone control and summarised alarms



*Optional: smoke detector with potential-free contact

Communicative bus solutions.

Modbus RTU and BACnet MS/TP via Belimo field unit BKN230-24-MOD

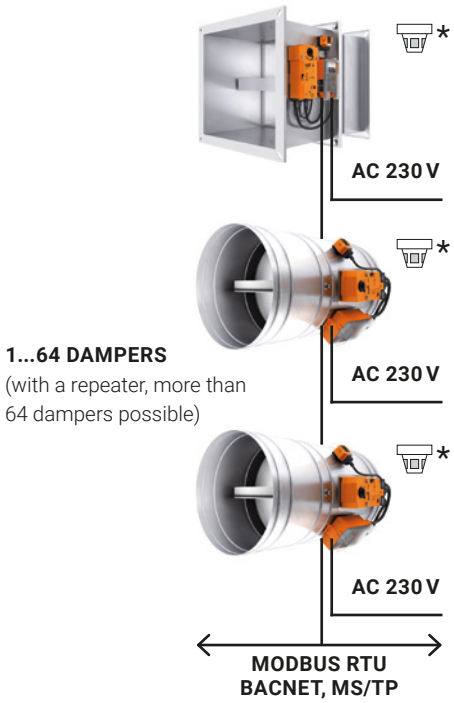
Actuator types

– BFL/BFN/BF
– BFG: 24-T(N)-ST/24-ST

T(N) = Thermoelectric tripping device
ST = With plug

Connection modules

– Interface to Modbus RTU
– Interface to BACnet MS/TP
– Baud rate up to 76'800 Bd
– Termination can be switched
– Parameterisation adjustable via DIL switch
– Changing from Modbus to BACnet via DIL switch



Connection to various protocols via MP-Bus® and DDC-Controller

Actuator types

– BFL/BFN/BF
– BFG: 24-T(N)-ST/24-ST

T(N) = Thermoelectric tripping device
ST = With plug

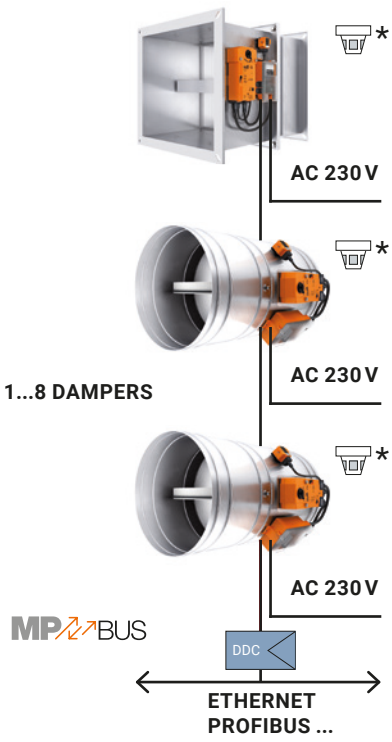
Connection modules

Communication and power supply unit BKN230-24-C-MP

– Interface to MP-Bus
– Decentralised power supply unit for 24 V fire damper actuators
– Local power supply AC 230 V
– Integrated LED status indicator
– Connection for a smoke detector contact and/or a thermoelectric tripping deviceg

Gateways

DDC controller with MP interface
Belimo provides the MP specifications to all manufacturers of DDC controllers. They can use these specifications to implement own hardware/software design into their devices.



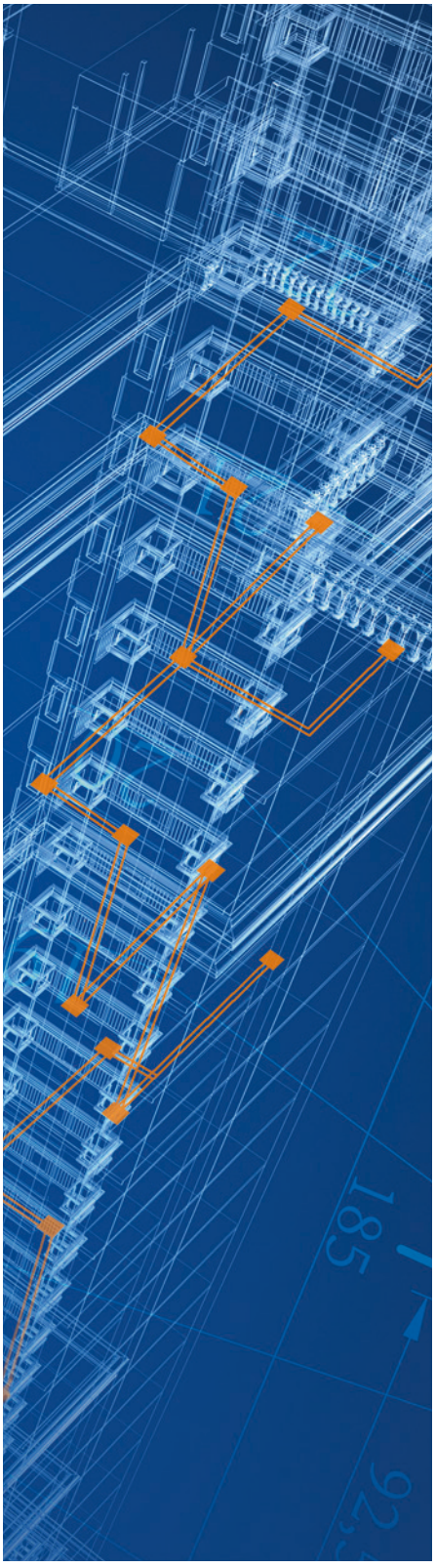
Efficient planning with BIM

Building Information Modeling (BIM) is the modern method of planning, constructing and managing buildings. With its world-leading actuator, valve and sensor solutions, Belimo is helping to make BIM even more efficient for every field of application. You and your customers benefit from these advantages:

- Belimo plug-in for the selection of 3D data models with technical information from Autodesk Revit
- Only one database for all actuators, valves and sensors from Belimo
- Planning, deadline and cost security
- Transparency in all Belimo product data
- Up-to-date, improved quality information for all project participants is available immediately

Planning with digital building models from BIM guarantees a significant increase in productivity and, at the same time, a reduction in planning errors. Use BIM with Belimo as a reliable partner.

Find out more at
www.belimo.eu/BIM



* Optional: smoke detector with potential-free contact

All inclusive.

Belimo as a global market leader develops innovative solutions for the controlling of heating, ventilation and air-conditioning systems. Damper actuators, control valves, sensors and meters represent our core business.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.

- 5-year warranty
- On site around the globe
- Complete product range
- Tested quality
- Short delivery times
- Comprehensive support

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BELIMO Automation AG
Brunnenbachstrasse 1, 8340 Hinwil, Schweiz
+41 43 843 61 11, info@belimo.ch, www.belimo.com

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